

In the fourth part of the paper the author relates a great number of experiments, which concur in proving that when a piece of metal is moved in any particular direction, either in front of a single magnetic pole, or between the opposite poles of a horse-shoe magnet, electrical currents are developed which pass along the substance of the metal in a direction transverse to that of its own motion. By the application of this principle, the author is enabled to explain the various phenomena which take place in the experiments of Arago and others, where magnetic action appears to be developed by rotation; and which have been erroneously attributed to simple magnetic induction, and to the time supposed to be required for the progress of that induction. The electro-magnetic effect of the electric current induced in a conductor by a magnetic pole, in consequence of their relative motion, is such as tends continually to diminish that relative motion; that is, to bring the moving bodies into the state of relative rest; so that if the one be made to revolve by an extraneous force, the other will tend to revolve with it in the same direction, and with the same velocity.

A paper was read, entitled "Some Remarks on the internal Structure of the *Platypus Anatinus* (*Ornithorhynchus paradoxus*, Blum.)." By Richard Griffin, Esq. Communicated by Dawson Turner, Esq. F.R.S.

Having an opportunity of examining two specimens of the *Ornithorhynchus*, the one male, the other female, belonging to the Norfolk and Norwich Museum, the author found in the latter two large mammary glands, one on each side of the chest, and covering nearly the whole under surface of the animal; numerous ducts proceeded from them, perforating the skin, at two circular portions, which presented no elevation corresponding to nipples. The Fallopiian tubes terminate by very small orifices in the cloaca: posterior to their terminations the author observed two slightly projecting processes, containing each the orifice of a duct which proceeds to a length of at least two inches, but the continuation of which could not be traced in the specimen examined in consequence of the injuries it had received. In the male, three pointed processes were noticed at each extremity of the corpora cavernosa of the penis, the cavities of which do not communicate with one another, and are separated before their termination. The spur of the male is furnished with a sac, of the size of a pea, containing a poisonous fluid, which by means of a canal is conducted into a wound inflicted by the spur.

December 22, 1831.

HIS ROYAL HIGHNESS THE DUKE OF SUSSEX, K.G.,
President, in the Chair.

The Right Hon. Sir James Graham, Bart. was elected a Fellow of the Society.

A paper was read, entitled "Some Account of a New Volcano in